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Optimization and New Technologies Implementation: Java Application for Data Transmission

Since the system of mobile connection was built, not many changes have been applied to it, but a lot of new technologies that can improve or cheapen mobile internet have been created, so it's reasonable to research a system capabilities with new technologies. Mobile applications which rely on remote data sources and databases are particularly challenging given the need to transmit data through wireless media.

The aim is to optimize traffic and internet connection of mobile internet users. It means that new technologies can provide better connection and transmission speed, less information transmitted, so users can pay less for their mobile internet.

The process of Java applications for data transmission consists of four parts:

1. forming the transmission data by application;
2. archiving the data with the aim of very high speeds and reasonable compression;
3. modulation and transmission;
4. Server receiving and sorting of incoming information.

The first part of the process is fully dependent on the application. It depends on a purpose of the application – whether it is real-time application (e.g. mobile online games) or non-real-time use that forms relatively large amount of data at once (possibly mobile browsers as they transmit a request and then receive full data). It influences the second part – data archiving.

First of all an algorithm of archiving is chosen. With real-time application, it's worth choosing very fast algorithm as such application forms little data that has no need for dense archiving and an aim of transmission is to synchronize with the server. As for non-real-time application, average speed and ratio of archiving algorithms have shown good results. User achieves good traffic economy and application work speed.

Modulation and transmission are the tasks of mobile device provided by a mobile operator and its technologies.

Most devices in Ukraine use GPRS or EDGE for data transmission as they are based on GSM technology that is a standard for Ukraine. But since 3G, smartphones and tablets have appeared, information transmission via internet has got higher priority than simple mobile conversations. 3G widens the capabilities of data transmission and number of users that can occupy the network at the same time. It also increases the speed that influences the development of applications so developers can pay more attention to the content rather than data transmission.